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Systematic Review

Assessing Pragmatic Skills in People with Intellectual Disabilities

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Abstract: People with intellectual disabilities live with significant conceptual, social, and practical limitations that hinder the acquisition, development, and use of language. Pragmatic skills facilitate interpersonal relationships, allowing for the understanding and expression of oneself, as well as the planning, organization, and adaptation of speech depending on the context and interlocutor. These skills imply, therefore, complex higher functions that must be articulated harmoniously for effective communication. Identifying the weaknesses of people with intellectual disability in the pragmatic dimension of language enables the provision of individualized support resources to guarantee their participation and social inclusion. This study presents a systematic review based on the PRISMA guidelines, and it includes the most commonly used assessment tools for pragmatic competence in people with intellectual disabilities over time. Of the 172 articles found, 20 met the inclusion criteria and were finally reviewed. The results show a lack of conformity between instruments in the pragmatic aspects evaluated and a lack of adjustment of the evaluation tools to the characteristics of this population. Therefore, the design of new standardized tests that specifically evaluate the pragmatic skills of people with intellectual disability is required in the near future. A tailored assessment is crucial for defining a complete profile of their communication skills and generating individualized intervention and support programs.

Keywords: pragmatics; communication; intellectual disability; assessment

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1. Introduction

In recent decades, neuropragmatics has become a central field of neuroscience research (Hagoort & Levinson, 2014; Levinson, 2016; Noveck, 2018). This area of research stresses that people cannot account for communicative acts, both linguistic and non-linguistic (Monfort, 2004), without referencing the underlying cognitive processes (Vidal, 2014). Some authors even speak of cognitive pragmatics to refer to the analysis of the mental states of interlocutors (Bara, 2011). From this perspective, the existence of limitations in cognitive abilities or in the ability to discriminate the information implicit in a communicative exchange is likely to hinder the task of communicating (Beaudichon, 1982), which may, in turn, affect both social skills and academic performance at an early age (Saul et al., 2023), as well as self-determination and socio-occupational inclusion at later developmental stages (Madaus et al., 2008; Test et al., 2009; Wehmeyer, 2020).

With this in mind, it is especially important to improve pragmatic competence within the field of intellectual disability (ID), which is currently defined, according to a socioecological approach, as a set of significant limitations both in intellectual functioning and adaptive behavior (expressed in conceptual, practical and social limitations), originating during the developmental period and restricting functional participation in everyday life (Schalock et al., 2021). Although pragmatics has traditionally been valued as a strength of people with ID (Garayzábal et al., 2010), individual differences in this population are highly manifested through different levels of support needs, making it necessary to develop specific evaluations in order to design personalized support plans that improve their social inclusion (Schalock et al., 2021).

According to Acosta et al. (2007), many people with ID live with communication barriers in their daily routines that limit their participation in both learning processes and social activities. This can be increased in people with specific disorders or syndromes, such as in the following: (1) people with autism and Fragile X syndrome (FXS), which is characterized by a limitation in initiating and maintaining conversations, as well as in literal comprehension resulting from a lack of attribution of intentions to the interlocutor (Diez-Itza et al., 2014); (2) people with Down syndrome (DS), who show a clear predominance of deficits in speech, coherence and use of context (De la Torre & Pérez-Pereira, 2019), with a lack of comprehension being a risk factor for the message being understood by the receiver (Kumin, 2002); and (3) people with Williams syndrome (WS), whose difficulty in initiating a conversation appropriately or lack of control of proxemics (Heinze, 2005) clearly hinders interaction.

According to Kumin (2002), it is essential to pay attention to language and communication in the field of disability, as failure in interpersonal relationships may lead to fewer future opportunities for access to employment (Fernández-Orrico, 2021). Behavioral problems might also arise from feelings of frustration (Staikova et al., 2013), with the presence of emotional disorders being found in 91.3% of cases of young people with ID and associated language disorders (Benner & Graham, 2009). Consequently, research has shown that the presence of low language skills is related, among other things, to difficulties with social–emotional and behavioral adjustment (Conti-Ramsden et al., 2018; Durkin & Conti-Ramsden, 2010; Johnson et al., 2010; Tromblin, 2008; Voci et al., 2006; Zubrick et al., 2007), which may account for the negative attitudes that young people often display toward disability (Nowicki & Sandieson, 2002; Rillotta & Nettelbeck, 2007).

Based on the current ecological and biopsychosocial model of ID (Verdugo et al., 2021), priority areas for research and intervention must foster inclusion from a rights-based approach (Mallén, 2021) and the improvement of their quality of life (Schalock & Verdugo, 2002, 2013; Verdugo & Schalock, 2009) by adjusting the variables that guarantee universal and cognitive accessibility (Royal Legislative Decree 1/2013, 29 November). Therefore, it is essential to study the communication barriers that people with ID live with daily, and to emphasize the family, school, and socio-occupational environments as essential contexts for their social development and emotional regulation (Cordier et al., 2013). Thus, from the perspective of quality of life and support (Verdugo et al., 2021), the services and resources provided must ensure compliance with the rights and well-being of people with disabilities. In addition, one of the main objectives of education must be to ensure that cognitive and/or communicative limitations do not represent a barrier or restriction to their right to full inclusion and participation (World Health Organization, 2001). Likewise, flexibilization and adaptation measures should be facilitated to allow access to lifelong learning and increase their employability (Strategy & Plan, 2015).

To make this possible, it is essential to have evaluative evidence with pragmatic foundations that "have an impact on the design of specific proposals and programs for

communicative intervention" (Rodríguez & Muñoz, 2020). Since Sarno (1969), the first to develop a global communication profile with The Functional Communication Profile, the increase in the design and development of resources for the evaluation of the pragmatic dimension aimed at different groups has been exponential. This increase has been noted both at the international level and in relation to the resources developed in Spanish (Prieto et al., 2021). Although, in recent years, some previous tests have been revised and new tools have been published (Aguinaga et al., 2004; Bishop, 2003; Botana & Peralbo, 2023; Marchman et al., 2023; Fernández-Urquiza et al., 2015; Gràcia et al., 2015; Kleiman, 2003; Newcomer & Hammill, 2009; Phelps-Terasaki & Phelps-Gunn, 2007; Rodríguez, 2012; Romero et al., 2014; Wiig et al., 2018), these are not specifically designed and normalized for people with ID, who have a very heterogeneous linguistic profile (Calleja-Reina et al., 2021). In addition, most of them do not account for the specificities of social communication across life stages (Prieto et al., 2021), and they typically address the assessment of global communication from the approach of linguistic pragmatics (Gallardo-Paúls, 2006), without focusing on specific pragmatic deficits that involve higher cognitive functions (Bishop, 2003) or paying attention to "micro-skills", which allow us to integrate the stimuli received to understand what others think (Frith, 1989). In addition, in general, these records are completed by the evaluator, and just a few consider the participation of significant people in the speaker's life (Gallardo-Paúls, 2005; Gallardo-Paúls & Moreno, 2006) or collect the information in natural or ecological interaction environments (ASHA, 2006).

The aim of this research is to carry out a systematic review so as to obtain a global vision of the assessment of pragmatics in people with ID. Specifically, this study has four objectives: (O1) identifying studies where pragmatic language impairments have been specifically assessed in a population with ID, (O2) analyzing the profiles of those assessed, (O3) determining the most commonly used tools for this purpose, and (O4) examining the components of the pragmatic dimension on which research and complementary evaluations have focused. This information will have the potential to detect strengths and weaknesses that will guide the future of research in this field.

2. Materials and Methods

The systematic review was conducted following the PRISMA criteria (Figure 1) and according to the following process: (I) defining inclusion/exclusion criteria, (II) applying a search strategy, (III) selecting studies, (IV) data extraction, and (V) assessing studies' risk of bias. PRISMA criteria can be found in Table S1 of the Supplementary Materials. The review was not prospectively registered. The whole process of the search and selection of studies is openly available in the Open Science Framework (OSF) (details in the Data Availability Statement). Each phase that was followed is described in a separate section below.

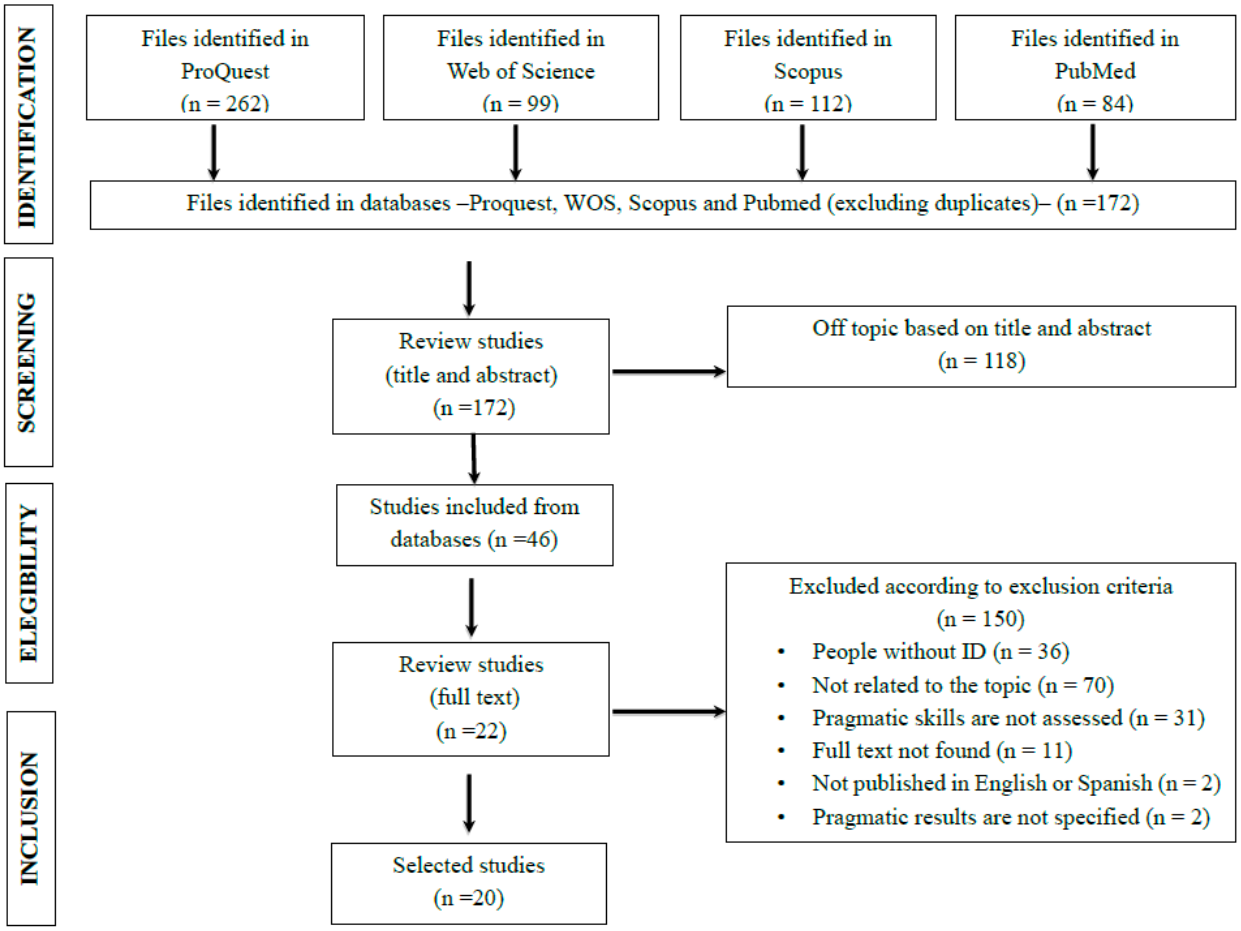

Figure 1. Flowchart (PRISMA) of the study selection procedure.

2.1. Inclusion Criteria

Studies that met the following inclusion criteria were included in the review: (I) All participants had to have ID, regardless of age, degree of impairment, or severity of symptoms. In studies with participants with different diagnoses, the results had to be reflected as categorized by disorder. (II) Studies focused on the assessment of pragmatic skills of subjects with ID (in the case of including the assessment of other skills, such as cognitive and/or linguistic skills, the results had to be shown separately). (III) Full texts were available and written in English or Spanish, independently of the participants' nationality and the corresponding adaptation of the assessment tools to the language of the country where the research was conducted.

2.2. Search Strategy

The literature search for this systematic review was conducted on 29 February 2024 using the following databases: ProQuest, Scopus, PubMed and the core collection of Web of Science (WoS). These databases were selected because they are more closely linked to studies of a social and educational nature. The search equation was formulated using the following operators: ('intellectual disabilit*' OR 'developmental disabilit*' OR 'learning disabilit*' OR 'mental retardation') AND ('pragmatic*') AND ('asses*' OR 'evaluat*' OR 'anali*' OR 'analy*'). The search process was not subject to a specific time interval due to the understanding of the scarcity of the existing literature. To ensure the quality and validity of the work, a peer review was performed, where the first and second authors shared parameters for analyzing the profiles of those assessed to help verify the results (Abadal & Da-Silva, 2020).

2.3. Selection of Studies

The first and second authors replicated the same process simultaneously and independently according to the established inclusion criteria and generated spaces for dialogue at the end of each phase. Initially, a filter was applied according to the titles and abstracts. Articles were imported into the bibliographic reference manager Mendeley Cite to automatically identify and eliminate duplicates, resulting in n = 172 studies. After an exhaustive analysis of the discrepancies and following the inclusion criteria, it was decided to include 6 texts that only one of the reviewers had originally selected. In addition, it was agreed to read the full texts of 17 articles that raised doubts.

Subsequently, after reading 22 full texts, the evaluators reached substantial agreement, with a coefficient of K = 0.72. Disagreement was detected in 10 texts, which, finally, were not included due to non-compliance with the inclusion criteria, resulting in total agreement and the definitive selection of 20 articles.

2.4. Data Extraction

The findings obtained in the assessment of pragmatic competence in people with ID were categorized according to the following variables: (I) article data (year, place of publication, country) and participant profile (number of subjects, gender, diagnosis and degree of impairment); (II) assessment variables measured (pragmatic tools, aspects assessed, other cognition and/or language tests, and collaborating informants), whose detailed analysis allowed for an overview of the current situation through the results and conclusions obtained in the different studies.

3. Results

Table S2 of the Supplementary Materials show the selected articles, and their objectives and designs. The most relevant results extracted from the 20 articles selected according to the different research questions are analyzed below (Table 1).

Table 1. Characteristics of the participants of the selected studies.

Selected Articles		Country	N	Diagnosis	Age	Sex
1	Alfieri et al. (2017).	Italy	32	WS	Children (14.6 years)/ adolescents/adults (39.8 years)	14 girls/18 boys
2	Angell et al. (2008).	USA	5	(1) DS; (2) Idiopathic ID; (3) DI due to trauma	15–19 years	4 men/1 woman
3	Courchesne et al. (2020).	Canada	1	Autism + ID	Adolescent	Male
4	Del Hoyo et al. (2018).	USA	69	(1) 39 FXS; (2) 30 DS		(1) FXS (men); (2) DS (20 men/10 women)
5	Diez-Itza et al. (2016).	Spain	9	WS		5 women/4 men
6	Diken (2014).	Turkey	86	(1) 34 Autism; (2) 52 ID		Autism (24 boys/ 10 girls)
7	Djordjevic et al. (2014).	Serbia		(1) WS; (2) Idiopathic ID; (3) DS	>17 years	
8	Hagan and Thompson (2014).	Ireland	1	Autism + ID		Woman
9	Hoffmann et al. (2013).	USA	20	WS	6–16 years	
10	Iacono et al. (1996).	Australia	11	(1) DS; (2) TND		7 men/4 women
11	Jenkins and Ramruttum (1998).	UK	10	SD	21–53 months	6 boys/4 girls

Table 1. *Cont.*

Selected Articles		Country	N	Diagnosis	Age	Sex
12	John et al. (2012).	USA	14	WS	boys 4.30 years/ girls 10.18 years	7 boys/7 girls
13	Klusek et al. (2014).	USA	123	(1) 29 Idiopathic Autism; (2) 38 FXS + comorbid; (3) 16 FXS without Autism; (4) 20 DS; (5) 20 TD	(1) Idiopathic Autism (school-age children); (2) FXS + comorbid; (3) FXS without Autism (not specified); (4) DS 11.31 years; (5) TD 4.82 years	
14	Martin et al. (2013).	USA	151	(1) 29 FXS; (2) 40 FXS + Autism; (3) 34 DS; (4) 48 TD		
15	McAtee et al. (2004).	USA	20	(1) Autism + ID; (2) FCU+ ID; (3) TB + ID; (4) Epilepsy + ID; (5) DT + ID		13 men/7 women
16	Owen et al. (1994).	Canada	4	DS	40, 30, 31, 32 years	Men
17	Shilc et al. (2017).	Slovenia	60	Mild ID	30 students (7 years old—15 girls and 15 boys)/ 30 students (9 years old—15 girls and 15 boys)	
18	Van Den Heuvel et al. (2016).	Belgium	24	(1) 12 WS; (2) 12 Idiopathic ID		
19	Van Den Heuvel et al. (2018).	Belgium	90	(1) 18 with 22q11.DS; (2) 19 Idiopathic ID; (3) 23 Idiopathic ID + Autism; (4) 30 DT		53 men/37 women
20	Wellnitz et al. (2021).	Germany	839	(1) 195 Autism; (2) 83 ID; (3) 144 different mental conditions; (4) 417 DT		

ID, intellectual disability; FXS, Fragile X syndrome; DS, Down syndrome; WS, Williams syndrome; TND, neurodevelopmental disorder; DT, typical development; TB, Bipolar disorder; PKU, phenylketonuria; TD, depressive disorder.

3.1. Analysis of the Studies About Pragmatics in ID (O1) and Profile of the Participants (O2)

As Table 1 indicates, the selected articles were published over the last three decades, with 2014 being the most prolific year, with 20% of the publications. In total, 50% of the research was carried out in European countries, while 35% was authored in the United States. The following were the types of studies: quasi-experimental studies (50%), phenomenological studies (20%), case studies (10%), psychometric property studies (10%), systematic reviews (5%), and case series studies (5%). Considering the three levels of pragmatics (Fernández-Urquiza et al., 2015); (enunciative (i.e., locutive and illocutive dimensions), textual (i.e., word and sentence construction, argumentative superstructures), and interactive (e.g., turn-taking)), our findings reveal that the majority of the studies were based on interactional pragmatics (60%). In contrast, only 25% of the research publications aimed to assess enunciative or textual pragmatics. The remaining 15% of the articles were just dedicated to testing the validity of a tool or intervention.

The total number of subjects with ID evaluated was 650, and their profiles are classified as follows: people with idiopathic ID (35.2%); Down syndrome (DS) (16.05%); Williams syndrome (WS) (13.4%); Fragile X syndrome (FXS) (13%); FXS and/or people with autism (19%). As for the severity of the ID, subjects presented as follows: mild (20%), mild–moderate (35%), moderate (15%), mild–deep (5%), and not specified (25%). Only 30% of the papers were based on specific studies of a single group (20% on WS and 10% on DS), while 11% were comparative studies. The only two case studies focused on people with autism. Age was only specified in 75% of the studies, with range being between 20 months and 40 years. Adolescence was the most represented range. In relation to sex, this was detailed in 60% of the studies, with a computation of 92 males and 90 females.

3.2. Pragmatics Tools Used to Assess ID Population (O3)

Regarding the assessment tools used in the different selected studies (Table 2), two categories can be established: (1) those using standardized tests, interviews, scales, or checklists carried out in structured situations (90%) and (2) those using direct observation in spontaneous or semi-structured situations (10%). Thirty percent of the studies used both modalities. On the other hand, 60% of the studies applied an assessment tool to a person with an ID, while 15% applied it to an informant, and 25% used both modalities.

Table 2. Evaluation instruments of the selected studies.

Selected Articles	Pragmatic Evaluation Tools	Components of Pragmatics	Other Cognitive or Language Tests	Informant
Alfieri et al. (2017).	VABS	VABS Communication Mastery	Leiter-R, PPVT-r, PVCL, BNT	Parents
Angell et al. (2008).	OD	(1) Mandatory turn-taking (2) Non-mandatory turn-taking (3) Ask focused questions to one's partner (4) Conversing with appropriate eye contact (5) Using an appropriate tone of voice in conversational speech		
Courchesne et al. (2020).	VABS-II	(1) Adaptive behaviors (2) Communication (3) Daily living skills (4) Socialization	RPM, WISC-V, CELF-CDN-F, WIAT-II, EOWPVT-IV, EVIP, LE Vol du PC, BALE	1 (Mother)
Del Hoyo et al. (2018).	(1) CCC-2 (2) SALT	(1) Loquacity (2) Unintelligibility (3) Disfluency (4) Lexical diversity (5) Syntactic complexity (6) Inappropriate initiation (7) Stereotyped language (8) Use of context (9) Non-verbal communication	Leiter-R, PPVT-III, CASL-EVT, CASL-SC, FBT, CBCL/6–18	2 (Parents)
Diez-Itza et al. (2016).	(1) OD (2) Recount of the sequential order of events. (3) Block design. (4) Average use of discourse markers (5) "Frog Goes to Dinner"	Coherence and cohesion of pragmatic competence	PPVT, WAIS-III	
Diken (2014).	TV-PLSI	(1) Stereotypical behaviors, communication and social interaction (2) Classroom interaction skills, social and personal interaction skills	TV-GARS-2	Special education school teachers
Djordjevic et al. (2014).	(1) Electrophysiological study (2) DANVA-2 (3) FAB (4) TFER (5) SRAI (6) Photos with facial expression	Recognizing emotional prosody and emotions	(1) Intelligence test (2) Visual discrimination	

Table 2. *Cont.*

Selected Articles	Pragmatic Evaluation Tools	Components of Pragmatics	Other Cognitive or Language Tests	Informant
Hagan and Thompson (2014).	(1) Pragmatic checklist designed by researchers (2) OD	(1) Beginning of communicative interaction. (2) Presentation of a specific topic. (3) Respect for taking turns. (4) Thematic continuity. (5) Request for clarification. (6) Appropriate eye contact. (7) Gestures and facial expressions.		One day center member and one residential center person
Hoffmann et al. (2013).	(1) TOPL-2 (2) CCC-2	(1) TOPL-2: physical context, audience, theme, purpose, visual and gestural cues, abstractions and pragmatic evaluation (2) CCC-2: pragmatics, syntax, morphology, semantics and speech	KBIT-2	Parents
Iacono et al. (1996).	(1) VABS (2) MCDI (3) OD	(1) Requests and comments. (2) Communicative acts.	RDLS-R	1 (Mother)
Jenkins and Ramruttum (1998).	(1) "Pragmatic profile of early communication skills" (2) OD	Pre-linguistic skills.	DLS	(1) Father (2) Mother
John et al. (2012).	(1) OD based on the game (2) Conversation with a family researcher.	(1) Number of sentences that the child makes and serves to adapt to the context (2) Questions in which the child makes eye contact with the interlocutor (3) Eye contact that the child makes while producing the statements	DAS, EVT	Mothers
Klusek et al. (2014).	(1) CASL–PJ (2) PRS–SA	(1) Communicative intention, turn-taking, emotional expression and pragmatic adaptation (2) Verbosity, social appropriateness, scripting, redundancy, failure to initiate topics, inappropriate turns, eye contact and communicative gestures	Leiter-R, PPVT-III, EVT, ADOS	
Martin et al. (2013).	CASL-PJ	Knowledge of appropriate language for various social situations	Leiter-R, CASL-Antonyms, CASL-SC, ADOS	
McAtee et al. (2004).	(1) Checklist CAI (2) OD	(1) Negative interactions and disagreements (2) Factors related to tasks and factors related to daily routines. (3) Uncomfortable environment and changes in the environment		2 (Support staff)
Owen et al. (1994).	OD	Speech acts, communicative initiative, speaking turns, and types of statements		1 man/1 woman (Support staff)

Table 2. *Cont.*

Selected Articles	Pragmatic Evaluation Tools	Components of Pragmatics	Other Cognitive or Language Tests	Informant
Shilc et al. (2017).	The Storytelling Test: Illustrations of The Frog King	Vocabulary, grammatical structure and structure of the content of stories		
Van Den Heuvel et al. (2016).	(1) APT (2) ITS-APT (3) RTNA-BST (4) Coding of statements into five categories (5) ITS-BST	(1) Perspective-taking ability (2) Quality and quantity of information transfer. (3) Manner and relevance of information transfer: coding of the statements into five categories (4) Narrative capacity	WPPSI-III-NL, SON, PPVT-III-NL, CELF-P2-NL, CELF-4-NL	
Van Den Heuvel et al. (2018).	FS (CELF-5)	Ability to interpret and use contextual information	WPPSI-III-NL, SON R6–40, PPVT-III-NL, CELF-4-NL, CELF-P2-NL, RS	
Wellnitz et al. (2021).	CCC-R, CCC-2	This is made up of 39 items instead of the 70 items that made up the original checklist	CBCL, SRS, SQC, Demographics data sheet	

Abbreviations of pragmatic evaluation tools. VABS: Vineland Adaptive Behavior Scales. FS: Subtest Formulating Sentences Clinical Assessment of Language Fundamentals-Fifth Edition (CELF-5). CCC-R: Revised Children's Communication Checklist-2. CCC-2: Children's Communication Checklist-2. CASL-PJ: Comprehensive Assessment of Spoken Language—Pragmatic Judgement. PRS–SA: Pragmatic Rating Scale—School Age. ADOS: Autism Diagnostic Observational Schedule. SALT: Systematic Analysis of Language Transcripts. APT: Action Picture Test. ITS-APT: Information Transfer Score. RTNA-BST: Renfrew Language Scales Dutch Adaptation—Bus Story Test. ITS-BST: "Information Transfer Score". MCDI: Macarthur Communicative Developmental Inventory. TV-PLSI: Turkish Version of the Pragmatic Language Skills Inventory, OD: Observación Directa. CAI: Contextual Assessment Inventory. TOPL-2: Test of Pragmatic Language-2. DANVA-2: Diagnostic Analysis of Nonverbal Accurcy Scale-2. FAB: Florida Affect Battery. TFER: Test of Facial Emotion Recognition. SRAI: Self-Report Anger Inventory. Abbreviations of other cognitive and language test. RPM: Raven's Standard Progressive Matrices. WISC-V: Wechsler Intelligence Scales for Children—Fifth Edition. CELF-CDN-F: Clinical Evaluation of Language Fundamentals—French Canadian Version. WIAT-II: Wechsler Individual Achievement Test—Second Edition. EOWPVT-IV: Expressive One-Word Picture Vocabulary Test—Fourth Edition. EVIP: Échelle de Vocabulaire en Images Peabody (French Version of the Peabody Picture Vocabulary Test). BALE: Batterie Analytique du Langage Écrit. WPPSI–III–NL: Wechsler Preschool and Primary Scale of Intelligence–III, Dutch Edition. SON R6–40: Categories and Analogies subtests from the Snijders–Oomen Nonverbal Intelligence Test Revised age 6–40. PPVT–III–NL: Receptive Vocabulary Age Equivalents (RVAE) of the Dutch edition of the Peabody Picture Vocabulary Test. CELF–4–NL: Dutch adaptation of the Clinical Evaluation of Language Fundamentals–Fourth Edition. CELF-P2-NL: Clinical Evaluation of Language Fundamentals—Preschool–Second Edition. RS: The Recalling Sentences. CBCL: Child Behavior Checklist. SRS: Social Responsiveness Scale. SCQ: Social Communication Questionnaire. Leiter-R: Leiter International Performance Scale-Revised. ADOS: Autism Diagnostic Observation Schedule. CASL-Antonyms: Comprehensive Assessment of Spoken Language—Antonyms. CASL-SC: Comprehensive Assessment of Spoken Language—Syntax Construction. PPVT-III: Peabody Picture Vocabulary Test—Third Edition. CASL-EVP: Comprehensive Assessment of Spoken Language—Expressive Vocabulary Test. FBT: False Belief Task. CBCL/6–18: Child Behavior Checklist, Ages 6–18. WAIS-III: Wechsler Adult Intelligence Scale. RDLS-R: Reynell Developmental Language Scales—Revised. TV-GARS-2: Turkish Version of the Gilliam Autism Rating Scale-2. DLS: Derbyshire Language Scheme. KBIT-2: The Kaufman Brief Intelligence Test, Second Edition. DAS: Differential Ability Scales. PPVT-r: Peabody Picture Vocabulary Test—Revised. PVCL: Prove di Valutazione delle Competenze Linguistiche. BNT: Boston Naming Test.

3.2.1. Scales and Checklists

Table S3 in the Supplementary Materials summarizes the evaluation instruments of the selected studies.

Most Commonly Used Tools

(1) The Vineland Adaptive Behavior Scales (VABS) (Sparrow et al., 1984) incorporate a semi-structured parent interview to measure adaptive behavior. Although this scale was not specifically developed to measure pragmatic language, it allows information to be collected in different domains related to communication, daily living skills and socialization. Alfieri et al. (2017) revealed that the WS child population obtained data similar to those of

their peers in socio-communicative skills. The results were even above the norm in children and adolescents. On the other hand, they revealed that the communicative resources of people with ID are functional. They showed that communicative behavior is affected when the context in which a child is assessed is changed (Iacono et al., 1996) and that improvements in adaptive behavior are sometimes observed (Courchesne et al., 2020).

(2) Children's Communication Checklist-2 (CCC-2) (Bishop, 2003) is a questionnaire designed to measure various aspects of communication covering different language skills. It can be administered to parents and teachers of children aged 4–16 years to collect data on all or most of the following subscales: speech, syntax, semantics, coherence, inappropriate initiation, stereotyped language, use of context, non-verbal communication, social relationships, and interests. In Wellnitz et al. (2021), 39 of the 70 items were assessed and found to reflect a greater deficit in the pragmatic skills of subjects with ID compared with the norm. On the other hand, Hoffmann et al. (2013) and Del Hoyo et al. (2018) complemented the results obtained by analyzing specific etiologies and/or administrating additional tests, with the former detecting that there were no significant differences between the CCC-2 (Bishop, 2003) and the TOPL-2 (Phelps-Terasaki & Phelps-Gunn, 2007) scores, while the latter reported that participants with DS demonstrated greater competence in pragmatic skills than participants with FXS before controlling for non-verbal cognition.

Less Frequently Used Tools

(1) Comprehensive Assessment of Spoken Language—Pragmatic Judgement (CASL-PJ) (Carrow-Woolfolk, 1999) was used by Klusek et al. (2014) and Martin et al. (2013); it involves telling a short story to subjects (aged 3–21) about children in different social situations. It assesses the ability to provide a pragmatically appropriate response about what they should do or say while considering communicative intention, turn-taking, emotional expression, and pragmatic appropriateness. In both studies, they showed that lower scores were closely related to autism comorbidity.

(2) The Turkish Version of the Pragmatic Language Skills Inventory (TV-PLSI) is a Turkish version of the previous item. It is a normative assessment tool for children aged 5–12 years, consisting of 45 items divided into three subscales: (1) stereotypical behaviors, (2) communication and social interaction, and (3) classroom, social and personal interaction skills. A rating scale is used and administrated by the primary caregiver or teacher to the individual in 5 or 10 min. Diken (2014) set out to compare the pragmatic skills of children with Autism and ID through teacher reports, finding them to be below average.

(3) Iacono et al. (1996), in addition to implementing the VABS, added the Macarthur Communicative Developmental Inventory (MCDI) (Fenson et al., 2007), an instrument completed by parents or professionals and designed for children between 8 and 30 months. It assesses early language acquisition through prelinguistic indicators, vocabulary, and grammar. It does so with the aim of comparing structured versus unstructured conditions, and it was concluded that structured procedures (communicative temptations) are an effective and efficient means of assessing early communicative skills.

(4) Pragmatic profile of early communication skills (Dewart & Summers, 1995): Jenkins and Ramruttum (1998) compared the pre-linguistic skills of children with DS with those of children with TD and with different learning difficulties. They used this questionnaire, which is completed by parents and assesses infants' functional communication skills. They found that children with DS and infants with TD did not differ significantly in some non-verbal communication behaviors.

(5) In Systematic Analysis of Language Transcripts (SALT), Del Hoyo et al. (2018) incorporated aspects such as physical context, audience, topic, purpose, visual and gestural

cues, and abstractions. The results point to better competencies in people with DS than in people with FXS.

(6) Test of Pragmatic Language—2 (TOPL-2) (Phelps-Terasaki & Phelps-Gunn, 2007). Here, Hoffmann et al. (2013) used the TOPL-2 to complete an assessment of the CCC-2. It includes 43 items for individuals aged 8 to 18 years and has a 17-item version for children aged 6 to 7 years. It is divided into seven pragmatic areas—physical context, audience, topic, purpose, visuospatial cues, abstractions, and pragmatic evaluation, while also allowing other variables, such as loquacity, unintelligibility, disfluency, lexical diversity, syntactic complexity, inappropriate initiation, stereotyped language, use of context, and non-verbal communication.

(7) Pragmatic Rating Scale-School Age (PRS-SA) (Greenslade et al., 2019; Landa, 2011) assesses 34 characteristics of pragmatic behavior during a semi-structured social interaction, such as verbosity, social opportunity, thematic continuity, redundancy, failure to initiate a sentence, reduced communicative intention, inappropriate turn-taking, and the use of non-verbal behaviors such as eye contact and communicative gestures. In addition, the items are scored on a scale of 0–2, meaning that a higher score implies a greater pragmatic deficit. The results of Klusek et al. (2014) showed that children with autism and FXS + autism presented problems in mood signaling and in paralinguistic intelligibility and stuttering aspects, while children with DS exhibited difficulties in stuttering, cluttering and intelligibility.

(8) Van Den Heuvel et al. (2018) used the Subtest Formulating Sentences of the Dutch adaptation of Clinical Assessment of Language Fundamentals- Fourth Edition (CELF-4-NL) (Kort et al., 2010) and identified that children with 22q11.2DS, with ID, and with ID + autism make errors in the form, content, or use of language due to incorrect contextual interpretation.

(9) Van Den Heuvel et al. (2016) organized the pragmatic skills of children with WS and ID into four categories: (1) perspective-taking ability, as assessed with a Dutch adaptation of the Action Picture Test (Renfrew, 2011); (2) quality and quantity of information transferred, with the Action Picture Test—Information Transfer Score (ITS-APT); (3) manner and relevance of information reporting, as assessed by coding sentences into five main themes; (4) narrative ability, as assessed using the Information Transfer Scores—Bus Story Test (ITS-BST) (Renfrew, 1995). As a result, children with WS exhibited a lower mean score for adequate information transfer and retelling compared with children with ID.

Finally, Djordjevic et al. (2014) conducted a systematic review on the assessment of paralinguistic aspects in people with ID, such as emotion recognition. The results revealed that nonverbal speech information has been frequently assessed in the syndromic ID population by means of tools such as the following: Diagnostic Analysis of Nonverbal Accuracy Scale-2 (Nowicki & Duke, 1994), Florida Affect Battery (Bowers et al., 1991), Test of Facial Emotion Recognition (Young et al., 2002), and Self-Report Anger Inventory (Benson & Ivins, 1992). This systematic review is limited to analyzing aspects of comprehension and expression of paralinguistic elements of communication in adults with ID, and does not show results about linguistic pragmatics.

Studies in Which a Pragmatic Checklist Is Designed

(1) Hagan and Thompson (2014) designed a pragmatic checklist where, by means of a semi-structured interview and observation, they determined whether there were changes in a subject's communicative skills after the implementation of a speech-generating device. They conducted an analysis of the communicative exchange through an ad hoc designed checklist composed of 15 pragmatic dimensions: (1) initiation of the interaction, (2) introduction of a specific topic, (3) continuation of the communication topic, (4) respect

of the conversational turn, (5) taking of the conversational turn, (6) maintenance of the topic after several turns of communication, (7) communication interruption, (8) request for clarification from the conversational partner, (9) restoration of the communication interruption, (10) completion of the conversational topic, (11) introduction of new conversational topics by the subject, (12) introduction of a new topic by the conversational partner, (13) maintenance of appropriate conversational eye contact, (14) use of gestures, and (15) use of facial expression. As a result, they found that a participant with moderate ID improved in turn-taking, topic maintenance, and the incorporation of new topics with support.

(2) McAtee et al. (2004) designed the Contextual Assessment Inventory, where a contextual assessment is conducted, and this appears to be efficient, thorough, and comprehensive, but does not provide information on why a particular item is associated with higher rates of problematic behavior.

3.2.2. Direct Observation

Direct observation (OD) was used as a tool for analyzing pragmatics in a total of eight studies. Those that applied it as a single test were the following: (1) Angell et al. (2008) for the systematic training of people with DS, observing improvements in turn-taking, asking questions, improving eye contact, and tone of voice; (2) Owen et al. (1994), who concluded that the most commonly used speech act among people with ID who were users of a residence was declarative, using discussion instead of dialogue.

Other studies using OD to complement their assessment include the following: (1) Diez-Itza et al. (2016) assessed the coherence and cohesion of the discourse of young adults with WS; (2) Hagan and Thompson (2014) designed a pragmatic checklist analyzing the 15 variables of the communicative behavior of a person with ID from the information that they collected through direct observation in their residential environment; (3) Iacono et al. (1996) evaluated communicative acts through unstructured play with a child; (4) Jenkins and Ramruttum (1998) evaluated pre-linguistic skills through an unstructured play situation; (5) John et al. (2012) evaluated verbal extension in a conversational exchange with a group of 14 children with WS based on play with their mothers; (6) McAtee et al. (2004) designed a test (Contextual Assessment Inventory) for non-standardized assessment by collecting paralinguistic, contextual, or communicative interaction aspects (turns, speech acts, initiatives, etc.). They concluded that this information can help predict greater markers of difficulty in pragmatics.

As part of the evaluation process, another significant variable considered in 55% of the articles was the figure of an informant, who was usually represented either by the family (63.6%) or by professionals (36.4%). As far as the family was concerned, in most cases, either the mother or both parents were usually involved (assigning each one a different task). The informant's role was to collaborate in data collection by providing additional information through different formats, such as interviews, filling in scales, questionnaires, or checklists, or being part of a spontaneous play situation where the mother interacted with the subject–participant of the study. Regarding professionals, 33% of these collaborators were support staff at a center (teachers, carers, etc.).

3.3. Components of the Pragmatic Dimension and Other Assessed Aspects (O4)

The domains or components of the pragmatic dimension analyzed were the following: (1) behavior, which was analyzed in terms of adaptive behavior and stereotyped behavior; (2) daily living skills related to habitual tasks and routines; (3) social interaction skills, which were focused on the pragmatic use of language appropriate to the social context; (4) interpretation of contextual cues considering the environment and flexibility to change from one context to another; (5) conversational skills based on turn-taking and turn respect,

thematic continuity, failure to introduce new topics, conversational initiative, speech acts, and communicative intention; (6) narrative ability, considering the quality and quantity of information transfer, vocabulary, grammatical and lexical structure of stories, the redundancy of topics, and the coherence and cohesion of narrative structure; (7) non-verbal communication, assessed in terms of eye contact, use of gestures and facial expressions, and the recognition of emotional prosody and emotions articulated through facial expressions; (8) requests for clarification; (9) pre-linguistic skills. The types of natural environments selected for direct observation were usually the following (from the highest to the lowest prevalence): home, hospital, educational or work center, and, in only one case, the subjects' immediate community.

Finally, only 15% of the studies exclusively reviewed the pragmatic dimension. In people with ID, 85% of the studies (n = 14), in addition to using pragmatic competence assessment instruments, added other complementary tests that assessed cognition and language. Of the total number of assessment tools, 28.5% used only one test, mostly related to language. Studies where complementary tests were not applied were observational. The most frequently used cognition tests were the following: Leiter International Performance Scale-Revised (Leiter-R), (Farmer, 2021); Wechsler Preschool and Primary Scale of Intelligence-III, Dutch adaptation (WPPSI-III-NL), (Wechsler & Tideman, 2005). The most commonly used language tests were Peabody Picture Vocabulary Test (PPTV), (Dunn, 1959) and the Dutch version of the Receptive Vocabulary Age Equivalents (RVAE) (PPVT-III-NL), (Schlichting, 2005); Clinical Evaluation of Language Fundamentals (Semel et al., 2011; Wiig et al., 2018)—including the Preschool Edition (CELF-P2, Wiig et al., 2004 and the Dutch adaptations (CELF–4–NL, Kort et al., 2010; CELF–P2–NL, De Jong, 2012); and Comprehensive Assessment of Spoken Language (CASL)—Antonyms (Rehfeld & Padgett, 2019).

3.4. Risk of Bias

Finally, the risk of bias of the 20 articles was analyzed by classifying them by the type of study based on the domains of the Joanna Briggs Institute (Munn et al., 2014).

(1) Qualitative phenomenological studies: The results were favorable with respect to inconsistency (philosophical perspective, objectives, and data collection), as the studies were consistent with the research methodology, objectives, and data collection. John et al. (2012) used transcription and coding to assess the sentences uttered by the participants; however, the results were not analyzed with a phenomenological approach, and standardized measures were used without considering individual differences. The aim of Shilc et al. (2017) was to find out, through a qualitative methodology, whether there were differences in people with mild ID according to their gender or age. However, the study is flawed in terms of its methodology, as it does not attempt to delve into the phenomenology of the study subjects but rather seeks to generalize the data to develop standardized scores and, consequently, to develop an intervention guide for improving pragmatic skills in academic and social contexts. Another design should have been employed rather than a descriptive–analytic and causal non-experimental methodology, as it also defines the dependent (pragmatic skills) and independent (gender and age) variables of the study. It is also noteworthy that, except for that of Owen et al. (1994), none of the studies clearly stated the researchers' cultural or theoretical stances on the research being conducted. In general, the representation of the participants, moral approval by parents and an ethical committee, and the conclusions drawn are criteria that are met in all of the selected articles; therefore, they present a low risk of bias.

(2) Case studies: The two case studies (Courchesne et al., 2020; Hagan & Thompson, 2014) presented an elaborate methodological design, resulting in a low risk of bias in any of the aspects assessed.

(3) Case series studies: In the study by Angell et al. (2008), there was a high risk of bias in most aspects, with the exception of the demographic characteristics and clinical history of the participants, the presentation of the results, and the demographic information of the clinical setting, as these four sections were well defined in the article.

(4) Quasi-experimental studies: As these were studies assessing pragmatic competence, the identification of two aspects related to the experimental design as subjecting participants to an intervention and pre- and post-intervention measures was impossible. None of the studies analyzed developed an intervention; therefore, no pre- or post-intervention measures were taken. However, the existence of the control group was determined by the design of the study itself in some studies (Jenkins & Ramruttum, 1998; Klusek et al., 2014; Martin et al., 2013; Van Den Heuvel et al., 2016, 2018) in which a specific syndrome was addressed, and the purpose was to identify pragmatic skills in comparison with those exhibited by other subjects with different syndromes that also cause ID. In these studies, all participants were assessed with the same instrument. However, it should be noted that in the study by Van Den Heuvel et al. (2016), in the second assessment, which was performed five years after the first measurement, each child had a different profile (regardless of which group they belonged to—WS or idiopathic ID); while some had attended speech therapy, others had not; some were in a special education school, while others were in mainstream schools. This could have biased the differences in the results obtained in the second measurement. Other studies (Alfieri et al., 2017; Del Hoyo et al., 2018; Diken, 2014; Hoffmann et al., 2013; Iacono et al., 1996) aimed to determine the pragmatic skills of subjects with different diagnoses or with the same diagnosis but at different ages. Their purpose was not to study the characteristics of a single syndrome in depth, but to draw up a general profile of the pragmatic skills of subjects with different syndromes or to find out the evolution of pragmatic skills at different ages. For this reason, there was no control group, since all of the participants made up the group of interest, but there were groups that were differentiated according to diagnosis and/or age. Four of the studies (Alfieri et al., 2017; Del Hoyo et al., 2018; Diken, 2014; Hoffmann et al., 2013) did not accurately build the reliability of their results. In the case of Del Hoyo et al. (2018), the study indicated that all measurements were administered by well-trained assistants with extensive experience working with people with developmental disorders; however, they did not indicate the reliability of the scores obtained, nor the degree of inter-rater agreement. Similarly, Hoffmann et al. (2013) specified that the implementation of the assessment instrument was performed by a speech therapist, but did not provide the reliability and validity of the scores. Meanwhile, the studies by Alfieri et al. (2017) and Diken (2014) indicated that all the instruments used had a high degree of validity and reliability, but they did not provide the reliability and validity of the scores obtained in their studies. However, even though the reliability of the results is not clear in all of the articles, none of the studies presented a high risk of bias in any of the other aspects assessed, which lends credibility to their assessment of pragmatic skills in subjects with ID.

(5) Studies of psychometric properties: With regard to the psychometric properties in the studies, it should be noted that the only two points of concern were the criterion validity, since no study provided information about this, and reliability, since in the study by McAtee et al. (2004), the reliability coefficient was <0.70, and in that by Wellnitz et al. (2021), they again did not provide the data. The rest of the domains assessed were well elaborated in the studies; therefore, they presented a low risk of bias.

(6) Systematic review: The review by Djordjevic et al. (2014) fulfilled only two of the eleven established criteria, presenting a high risk of bias in the absence of two reviewers for critical appraisal, in the methodology used to minimize data extraction and combine

studies, and in the non-existent assessment of bias in the publications. Overall, the studies have a low risk of bias, considering that the design, evidence, and results are valid.

4. Discussion

Neuropragmatics has emerged as a crucial field in the understanding of communicative acts, highlighting the interrelationship between cognitive processes and communication. When elaborated language levels are not available, primitive forms are sometimes used to express oneself (Verdugo & Bermejo, 2009) and, although maladaptive behaviors (avoidance, shutdown, aggression, disruption, etc.) have always been considered to be inherent to ID, they are now recognized as a manifestation of the consequences resulting from failure in interpersonal relationships or barriers to participation, thus conditioning their self-determination and empowerment, among other aspects (Schalock et al., 2021).

After compiling the available studies on the assessment of pragmatics in people with ID, a significant number of texts were not found, despite not having narrowed the time range of the search and not having established very restrictive inclusion criteria. Furthermore, there has been a lack of publications in recent years, with the interval of greatest scientific dissemination being between 2013 and 2018. In short, research on the pragmatic skills of people with ID can be considered relatively novel, and is still at a very early stage. Evidence suggests that, with respect to a certain period (1950–2000), the number of tools developed and/or revised to assess pragmatic competence has increased exponentially in this century (Kleiman, 2003; Wiig et al., 2018). Although there is unanimity on the purpose of the 20 texts collected in this study, with pragmatics being, in general terms, their objective, there is a great deal of variability in the constructs assessed, the instruments used for this purpose, and even in the components of pragmatics that are considered most significant for determining the communicative profile of the subjects. There are hardly any two identical evaluations that repeat the structure or elements of the process, even when assessing the same population, such as people with DS (Jenkins & Ramruttum, 1998; Owen et al., 1994), or when evaluations are executed by the same evaluator, as in the case of Van Den Heuvel et al. (2016, 2018).

In short, there is considerable heterogeneity in the selection of tools used to assess pragmatic competence. In general, observation is the most widely used tool, given the difficulties in standardizing scales. Among these, the most widely used tools are the Vineland Adaptive Behavior Scales (VABS) (Alfieri et al., 2017; Courchesne et al., 2020; Iacono et al., 1996), which record the domains of adaptive behavior, communication, daily living skills and socialization, and categorize these as speech acts, and the Children's Communication Checklist-2 (CCC-2) (Del Hoyo et al., 2018; Hoffmann et al., 2013; Wellnitz et al., 2021), whose approach fits more closely with the assessment of linguistic pragmatics. Although both scales are standardized scales, none of them have been specifically designed and normed for evaluating communication in people with ID. For that, direct observation is the methodological resource that is most commonly used in these cases, both exclusively or in addition to other instruments (Jenkins & Ramruttum, 1998; John et al., 2012; McAtee et al., 2004), where the common denominator is contextual pragmatics or interaction structure.

As for the use of other tests applied as a complement to pragmatic language assessments, only 11 studies consider cognitive assessment to be relevant (Alfieri et al., 2017; Courchesne et al., 2020; Del Hoyo et al., 2018; Diken, 2014; Djordjevic et al., 2014; Hoffmann et al., 2013; Iacono et al., 1996; John et al., 2012; Klusek et al., 2014; Martin et al., 2013; Van Den Heuvel et al., 2016, 2018). More studies focus on assessing subjects' linguistic repertoire, that is, the content and form of language (Alfieri et al., 2017; Diken, 2014; Djordjevic et al., 2014; Hoffmann et al., 2013; Iacono et al., 1996; Jenkins & Ramruttum, 1998; John et al., 2012; Klusek et al., 2014; Martin et al., 2013; Van Den Heuvel et al., 2016, 2018). Only

one of the studies (Wellnitz et al., 2021) completed a pragmatic assessment test with several subscales measuring social behavior and aspects of context.

In terms of methodology, more than half of the studies considered the participation of informants, with the aim of collaborating in data collection, providing additional information, and/or being part of the spontaneous situation of semi-structured or spontaneous conversation. These figures mainly represent the parents (both parents or only the mother), professionals, and/or carers.

In relation to the analyses of subjects with ID under evaluation, it is important to note that there is parity between sexes, the average age is in the adolescent stage, and the studies are based on the same etiologies; the diagnoses of the participants are limited to idiopathic ID, WS, DS, XFS, and/or autism. No studies on low-prevalence neurodevelopmental syndromes or disorders are included, except in two cases—Van Den Heuvel et al. (2018) and Wellnitz et al. (2021), who include, in addition to other more prevalent groups, 18 subjects with 22q11.DS and 144 people with "different mental conditions", respectively. In conclusion, it seems that there is a certain homogeneity in the participants recruited for the different studies, suggesting that other profiles may be overlooked in this area of evaluation.

People with WS are the group that has most often been the subject of pragmatics studies for several purposes, as follows: (1) delimitating a behavioral phenotype related to some pragmatic skills (retelling a story and referential communication) and assessing structural language skills in the longitudinal study conducted by Van Den Heuvel et al. (2018); (2) determining narrative coherence and cohesion (Diez-Itza et al., 2016); (3) comparing two pragmatic assessment tools and concluding on whether they are valid in identifying the pragmatic difficulties of this group (Hoffmann et al., 2013); (4) establishing the temporal stability of different pragmatic skills (number of sentences and questions a child asks to lengthen a conversation) in a longitudinal study (John et al., 2012); (5) determining whether social–communicative skills are in line with mental age by comparing two age groups: children and adolescents (Alfieri et al., 2017). The next groups in which a higher frequency of pragmatics assessment has been found are people with DS and SXF (Del Hoyo et al., 2018; Jenkins & Ramruttum, 1998; Klusek et al., 2014; Martin et al., 2013).

Some studies have compared pragmatic skills between different syndromes (Del Hoyo et al., 2018; Klusek et al., 2014; Martin et al., 2013), and others compared pragmatic skills with linguistic skills or with autism to determine their influence on pragmatic difficulties (Alfieri et al., 2017; Diken, 2014; Van Den Heuvel et al., 2016, 2018). Regarding these studies' results, there are some false beliefs that have been refuted, such as that people with WS are "natural story tellers" (Diez-Itza et al., 2016), supporting other studies wherein people with WS produced narratives that lacked coherence, and many times obtained worse scores in pragmatic skills than people with DS (Moraleda-Sepúlveda et al., 2022). Similarly, it seems that there are not so many differences in the pre-linguistic skills of children with DS and TD (Jenkins & Ramruttum, 1998), as was found in other research.

This systematic review can be considered reliable, as the entire procedure was conducted using a peer-review approach. Each researcher replicated the entire process independently, obtaining concordant results. As for the limitations of the study, given the variability of meanings used to refer to the construct of pragmatics, the assessment tools and papers reviewed are very heterogenous and difficult to compare. In addition, it is possible that the search expression or the eligibility criteria established may have resulted in potentially important information being discarded. Lastly, studies of subjects with Autism or ADHD profiles that did not present ID were eliminated; however, it would be important to take into consideration certain variables of neurocognition that limit the functioning of the communication process, such as theory of mind, central coherence theory, and executive

function disorder, a triad on which there is already a large body of literature that could serve as a basis for identifying other important assessment models.

Future research must include a more representative sample of people with ID, striving to encompass a more diverse sample. It is also necessary to design a pragmatic assessment scale for people with ID that considers their specificity and allows a complete profile of their communicative potential and weaknesses to be defined. Consequently, professionals could more easily develop individualized support plans that would meet the needs of each person in their natural environment, thereby eliminating social stigma and empowering people with ID. Similarly, pragmatic assessment tools for people with ID must consider different age groups and should provide shared patterns among people with the same profile. In order for this new tool to be as comprehensive and reliable as possible, it would be important to incorporate variables that are barely observed in the selected studies, or that would need to be studied in greater depth, such as the following:

(I) Augmentative and/or alternative communication, considering that a very high percentage of people with ID are likely to be users of a communication support product due to the significant limitations that characterize the group. Only one of the studies mentions comparing the performance of a subject after training with a speech-generating instrument (Hagan & Thompson, 2014). As development progresses, problems decrease or disappear (Mangrulkar et al., 2001);

(II) A detailed analysis of the context wherein the subject operates, in order to know the external demand and assess the adaptive skills necessary to adjust to both the environment and the interlocutors (cognitive accessibility, opportunities, communication styles, etc.);

(III) The prerequisites of cognition, such as attention (assessing, among other things, the time of sustained attention during a communicative exchange) or aspects related to neurocognition (decision-making based on reasoning or the integration of information that occurs during interaction);

(IV) The participation of various close people as main informants as a complement to an expert's assessment. They become allies for therapists in terms of both the collection of data and the generalization of learning, where it is understood that, despite the risk of bias due to subjectivity or logical ignorance, they are natural supports, they know the subject, and they can provide reliable information on their level of performance in various real situations.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/bs15030281/s1, Table S1. PRISMA checklist (Page et al., 2021). Table S2. Selected articles, objective and design. Table S3. Evaluation instruments of the selected studies.

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References

Abadal, E., & Da-Silva, L. (2020). Open peer review: Another step towards open science by scientific journals. *Anuario ThinkEPI*, *14*, 1874. [CrossRef]

Acosta, V., Moreno, A., Cámara, M., Coello, A., & Mesa, J. (2007). *Guía de actuaciones educativas en el ámbito de la comunicación y el lenguaje*. Consejería de Educación, Universidades, Cultura y Deportes del Gobierno de Canarias.

Aguinaga, G., Armentia, M. L., Fraile, A., Olangua, P., & Uriz, N. (2004). *Manual del PLON-R. Prueba de lenguaje oral de navarra-revisada*. TEA Ediciones.

Alfieri, P., Menghini, D., Marotta, L., De Peppo, L., Ravà, L., Salvaguardia, F., Varuzza, C., & Vicari, S. (2017). A comparison between linguistic skills and socio-communicative abilities in Williams syndrome. *Journal of Intellectual Disability Research*, *61*(9), 866–876. [CrossRef]

Angell, M. E., Bailey, R. L., & Larson, L. (2008). Systematic instruction for social-pragmatic language skills in lunchroom settings. *Education and Training in Developmental Disabilities*, *43*, 342–359.

ASHA: American Speech-Language-Hearing Association. (2006). *Preferred practice patterns for the profession of audiology*. Available online: https://www.asha.org/policy/ (accessed on 1 October 2024).

Bara, B. G. (2011). Cognitive pragmatics: The mental processes of communication. *Intercult Pragmat*, *8*(3), 443–485. [CrossRef]

Beaudichon, J. (1982). *La communication sociale chez l'enfant*. FeniXX.

Benner, A. D., & Graham, S. (2009). The transition to high school as a developmental process among multiethnic urban youth. *Child Development*, *80*(2), 356–376. [CrossRef]

Benson, B. A., & Ivins, J. (1992). Anger, depression and self-concept in adults with mental retardation. *Journal of Intellectual Disability Research*, *36*(2), 169–175. [CrossRef]

Bishop, D. V. M. (2003). *The children's communication checklist, version 2 (CCC-2)*. The Psychological Corporation.

Botana, I., & Peralbo, M. (2023). EDPRA: A screening instrument for assessing early pragmatic development. *Revista de Investigación en Logopedia*, *13*(2), 3186–3194.

Bowers, D., Blonder, L. X., Feinberg, T., & Heilman, K. M. (1991). Differential impact of right and left hemisphere lesions on facial emotion and object imagery. *Brain: Journal of Neurology*, *114*(6), 2593–2609. [CrossRef]

Calleja-Reina, M., Luque, M. L., & Rodríguez-Santos, J. M. (2021). Protocolo de Valoración del Perfil Comunicativo Lingüístico de personas con necesidades complejas de comunicación y discapacidad intelectual (PCL-DIS-NCC). In M. Calleja-Reina (Ed.), *Necesidades complejas de comunicación y enfermedadesminoritarias* (pp. 30–35). McGraw Hill Education.

Carrow-Woolfolk, E. (1999). *Comprehensive assessment of spoken language*. American Guidance Services.

Conti-Ramsden, G., Durkin, K., Toseeb, U., Botting, N., & Pickles, A. (2018). Education and employment outcomes of young adults with a history of developmental language disorder. *International Journal of Language & Communication Disorders*, *53*(2), 237–255. [CrossRef]

Cordier, R., Munro, N., Wilkes-Gillan, S., & Docking, K. (2013). The pragmatic language abilities of children with ADHD following a play-based intervention involving peer-to-peer interactions. *International Journal of Speech-Language Pathology*, *15*(4), 416–428. [CrossRef] [PubMed]

Courchesne, V., Langlois, V., Gregoire, P., St-Denis, A., Bouvet, L., Ostrolenk, A., & Mottron, L. (2020). Interests and strengths in autism, useful but misunderstood: A pragmatic case-study. *Frontiers in Psychology*, *11*, 569339. [CrossRef] [PubMed]

De Jong, J. (2012). *CELF-P2-NL. Clinical evaluation of language fundamentals—Preschool—Second edition. Nederlandstalige versie*. Handleiding.

De la Torre, A., & Pérez-Pereira, M. (2019). Pragmatic abilities in children with ASD, ADHD, Down syndrome, and typical development through the Galician version of the CCC-2. *Revista de Logopedia, Foniatría y Audiología*, *39*(3), 105–114. [CrossRef]

Del Hoyo, L., Thurman, A. J., & Abbeduto, L. (2018). Specificity: A phenotypic comparison of communication-relevant domains between youth with Down syndrome and fragile X syndrome. *Frontiers in Genetics*, *9*, 424. [CrossRef] [PubMed]

Dewart, H., & Summers, S. (1995). *The pragmatics profile of everyday communication skills in children—Revised*. NFER-Nelson.

Diez-Itza, E., Martínez, V., & Antón, A. (2016). Narrative competence in Spanish-speaking adults with Williams syndrome. *Psicothema*, *28*(3), 291–297. [CrossRef] [PubMed]

Diez-Itza, E., Martínez, V., Miranda, M., Antón, A., Ojea, A. I., Fernández-Urquiza, M., & Medina, B. (2014, July 15–19). *The syndroling project: A comparative linguistic analysis of typical development profiles and neurodevelopmental genetic syndromes (down, williams and fragile X syndromes)*. IASCL-XII International Congress for the Study of Child Language, Prague, Czech Republic. [CrossRef]

Diken, Ö. (2014). Pragmatic language skills of children with developmental disabilities: A descriptive and relational study in turkey. *Eurasian Journal of Educational Research*, *55*, 109–122. [CrossRef]

Djordjevic, M., Glumbic, N., & Brojcin, B. (2014). Paralinguistic aspects of pragmatic abiilities in adults with intellectual disability. *Research in Developmental Disabilities*, *48*, 211–219. [CrossRef]

Dunn, L. M. (1959). *Peabody picture vocabulary test: Original edition*. American Guidance Service.

Durkin, K., & Conti-Ramsden, G. (2010). Young people with specific language impairment: A review of social and emotional functioning in adolescence. *Child Language Teaching and Therapy*, *26*(2), 105–121. [CrossRef]

Farmer, C. (2021). Leiter International performance scale-revised (Leiter-R). In *Encyclopedia of autism spectrum disorders* (pp. 2701–2705). Springer International Publishing.

Fenson, L., Marchman, V. A., Thal, D. J., Dale, P. S., Reznick, J. S., & Bates, E. (2007). *MacArthur-Bates communicative development inventories* (2nd ed.). Brookes Publishing.

Fernández-Orrico, F. J. (dir.) (2021). *Inclusión laboral de personas con discapacidad intelectual: Respuestas a problemas de acceso y permanencia en el empleo)* [Labor inclusion of people with intellectual disabilities: Responses to problems of access and permanence in employment]. Tirant lo Blanch.

Fernández-Urquiza, M., Díaz, F., Moreno, V., Lázaro, M., & Simón, T. (2015). *PREP-R: Protocolo rápido de evaluación pragmática–revisado*. Universidad de Valencia.

Frith, U. (1989). A new look at language and communication in autism. *International Journal of Language & Communication Disorders*, *24*(2), 123–150. [CrossRef]

Gallardo-Paúls, B. (2005). Guía comunicativa para interlocutors clave en el marco de la conversación afásica [Communicative Guide for Key Interlocutors in the Framework of Aphasic Conversation]. *ELUA: Estudios De Lingüística*, *19*, 157–168. [CrossRef]

Gallardo-Paúls, B. (2006). Más allá de las palabras y su estructura: Las categorías del componente pragmático [Beyond words and structure: The categories of the pragmatic component]. In E. Garayzábal (Ed.), *Lingüística clínica y logopedia [clinical linguistics and speech therapy]* (pp. 81–196). Antonio Machado Libros.

Gallardo-Paúls, B., & Moreno, V. (2006). Estrategias colaborativas de compensación del déficit lingüístico: La importancia del interlocutor-clave en el índice de participación conversacional [Collaborative strategies for compensating linguistic deficits: The importance of the key interlocutor in the conversational participation index. *Pragmalingüística*, *13*, 17–32.

Garayzábal, E., Itza, E. D., & Prieto, M. F. (2010). *Guide to speech therapy intervention in Williams syndrome*. Synthesis.

Gràcia, M., Benitez, P., Vega, F., & Domeniconi, C. (2015). Escala de valoración de la enseñanza del lenguaje oral en contexto escolar: Adaptación para su uso en educación especial. *Revista de Logopedia, Foniatría y Audiología*, *35*(2), 84–94. [CrossRef]

Greenslade, K. J., Utter, E. A., & Landa, R. J. (2019). Predictors of pragmatic communication in school-age siblings of children with asd and low-risk controls. *Journal of Autism and Developmental Disorders*, *49*, 1352–1365. [CrossRef] [PubMed]

Hagan, L., & Thompson, H. (2014). It's good to talk: Developing the communication skills of an adult with an intellectual disability through augmentative and alternative communication. *British Journal of Learning Disabilities*, *42*(1), 66–73. [CrossRef]

Hagoort, P., & Levinson, S. C. (2014). *The cognitive neurosciences* (5th ed., pp. 667–674). MIT Press.

Heinze, E. G. (2005). Williams syndrome and syndrome of. non-verbal learning disabilities: Does genetics have the clue for pragmatic disturbances? *Vigo International Journal of Applied Linguistics*, *2005*(2), 9–26.

Hoffmann, A., Martens, M. A., Fox, R., Rabidoux, P., & Andridge, R. (2013). Pragmatic language assessment in Williams syndrome: A comparison of the Test of Pragmatic Language-2 and the Children's Communication Checklist-2. *American Journal of Speech-Language Pathology*, *22*(2), 198–204. [CrossRef]

Iacono, T. A., Waring, R. E., & Chan, J. B. (1996). Sampling communicative behaviours in children with intellectual disability in structured and unstructured situations. *International Journal of Language & Communication Disorders*, *31*(2), 106–120. [CrossRef]

Jenkins, C., & Ramruttum, B. (1998). Prelinguistic communication and down syndrome. *Down Syndrome Research and Practice*, *5*(2), 53–62. [CrossRef]

John, A. E., Dobson, L. A., Thomas, L. E., & Mervis, C. B. (2012). Pragmatic abilities of children with williams syndrome: A longitudinal examination. *Frontiers in Psychology*, *3*, 199. [CrossRef] [PubMed]

Johnson, C. J., Beitchman, J. H., & Brownlie, E. B. (2010). Twenty-year follow-up of children with and without speech-language impairments: Family, educational, occupational, and quality of life outcomes. *American Journal of Speech-Language Pathology*, *19*(1), 51–65. [CrossRef]

Kleiman, L. I. (2003). *Functional communication profile: Assessing communicative effectiveness in clients with developmental delays*. LinguiSystems.

Klusek, J., Martin, G. E., & Losh, M. (2014). A comparison of pragmatic language in boys with autism and fragile X syndrome. *Journal of Speech, Language, and Hearing Research*, *57*(5), 1692–1707. [CrossRef] [PubMed]

Kort, W., Schittekatte, M., & Compaan, E. L. (2010). *Clinical evaluation of language foundations-4 NL. Clinical evaluation of language foundations-4 NL*. The Psychological Corporation.

Kumin, L. (2002). Starting out: Speech and language intervention for infants and toddlers with Down syndrome. In W. I. Cohen, L. Nadel, & M. E. Madnick (Eds.), *Down syndrome: Visions for the 21st century*. John Wiley & Sons. [CrossRef]

Landa, R. J. (2011). *Pragmatic rating scale for school-age children* [Unpublished manuscript]. Kennedy Kreiger Institute.

Levinson, S. C. (2016). Turn-taking in human communication–origins and implications for language processing. *Trends in Cognitive Sciences*, *20*(1), 6–14. [CrossRef]

Madaus, J. W., Zhao, J., & Ruban, L. (2008). Employment satisfaction of university graduates with learning disabilities. *Remedial and Special Education*, *29*(6), 323–332. [CrossRef]

Mallén, M. G. (2021, February 4–5). *The human rights-based approach in development strategies for people with functional diversity* [Human Rights and the Fight against Discrimination]. IV International Congress on Human Rights, Fundación Mainel, Valencia, Spain.

Mangrulkar, L., Whitman, C. V., & Posner, M. (2001). *Life skills approach for healthy child and adolescent development*. Pan American Health Organization.

Marchman, V., Dale, P., & Fenson, L. (2023). *MacArthur-Bates communicative development inventories* (3rd ed.). Brookes Publishing.

Martin, G. E., Losh, M., Estigarribia, B., Sideris, J., & Roberts, J. (2013). Longitudinal profiles of expressive vocabulary, syntax and pragmatic language in boys with fragile X syndrome or down syndrome: Vocabulary, syntax, and pragmatics in FXS or DS. *International Journal of Language & Communication Disorders*, *48*(4), 432–443. [CrossRef]

McAtee, M., Carr, E. G., Schulte, C., & Dunlap, G. A. (2004). Contextual assessment inventory for problem behavior: Initial development. *Journal of Positive Behavior Interventions*, *6*(3), 148–165. [CrossRef]

Monfort, M. (2004). Intervention in children with pragmatic language and communication disorders. *Revista de Neurologia*, *38*(S1), 85. [CrossRef]

Moraleda-Sepúlveda, E., López-Resa, P., Pulido-García, N., López-Peces, P., Santos-Muriel, N., & Gutiérrez Arce, G. (2022). Communicative and pragmatic skills: Down syndrome vs Williams syndrome. *Global Journal of Rare Diseases*, *7*(1), 011–016. [CrossRef]

Munn, Z., Moola, S., Riitano, D., & Lisy, K. (2014). The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *International Journal of Health Policy and Management*, *3*(3), 123–128. [CrossRef]

Newcomer, P., & Hammill, D. D. (2009). *PLOS: Pragmatic language observation scale*. Hammill Institute on Disabilities.

Noveck, I. (2018). *Experimental pragmatics: The making of a cognitive science*. Cambridge University Press.

Nowicki, E. A., & Sandieson, R. (2002). A meta-analysis of school-age children's attitudes towards persons with physical or intellectual disabilities. *International Journal of Disability, Development, and Education*, *49*(3), 243–265. [CrossRef]

Nowicki, S. J., & Duke, M. P. (1994). Individual differences in the nonverbal communication of affect: The diagnostic analysis of nonverbal accuracy scale. *J ournal of Nonverbal Behavior*, *18*, 9–35. [CrossRef]

Owen, M. S., Mcdonald, L., & Baine, D. (1994). Direct observation of communicative interaction in a group home setting. *Education and Training in Mental Retardation and Developmental Disabilities*, *29*, 34–42.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., & Chou, R. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, *372*, n71. [CrossRef]

Phelps-Terasaki, D., & Phelps-Gunn, T. (2007). *Pragmatic language test (TOPL-2)*. PRO-ED Inc.

Prieto, C., Sepúlveda, C., & Soto, G. (2021). Instrumentos de evaluación pragmática y comunicativa en español. *Logos*, *31*(1), 3–25. [CrossRef]

Rehfeld, D. M., & Padgett, R. N. (2019). Test review: Comprehensive assessment of spoken language–second edition. *Journal of Psychoeducational Assessment*, *37*(4), 524–529. [CrossRef]

Renfrew, C. (2011). *Action picture test–Revised edition*. Speechmark.

Renfrew, C. E. (1995). *The renfrew language scales*. Winslow.

Rillotta, F., & Nettelbeck, T. (2007). Effects of an awareness program on attitudes of students without an intellectual disability towards persons with an intellectual disability. *Journal of Intellectual & Developmental Disability*, *32*(1), 19–27. [CrossRef]

Rodríguez, F. J. (2012). La conciencia pragmática de adultos con síndrome de Asperger. *Revista de logopedia, foniatría y audiología (Internet)*, *32*(1), 21–31. [CrossRef]

Rodríguez, F. J., & Muñoz, I. O. (2020). La comunicación unilateral en el síndrome de Asperger: La agilidad de turno y el índice de participación en los intercambios orales de niños con y sin déficit pragmático. *Acta Scientiarum Language and Culture*, *42*(2), e52791. [CrossRef]

Romero, J., Higuera, M., Cuadra, A., Correa, R., & Real, D. (2014). Protocol for pragmatic language assessment (PEP-L). *Limit, Interdisciplinary Journal of Philosophy and Psychology*, *9*(29), 191–210.

Sarno, M. T. (1969). *The functional communication profile. Manual of directions.*. Institute of Rehabilitation Medicine.

Saul, J., Griffiths, S., & Norbury, C. F. (2023). Prevalence and functional impact of social (pragmatic) communication disorders. *Journal of Child Psychology and Psychiatry*, *64*(3), 376–387. [CrossRef] [PubMed]

Schalock, R., Luckasson, R., & Tassé, M. J. (2021). *Intellectual disability: Definition, diagnosis, classification, and systems of supports* (12th ed.). American Association on Intellectual and Developmental Disabilities.

Schalock, R. L., & Verdugo, M. A. (2002). *Handbook on quality of life for human service practitioners*. American Association on Mental Retardation.

Schalock, R. L., & Verdugo, M. A. (2013). The impact of the quality of life concept on the field of intellectual disability. In M. Wehmeyer (Ed.), *The Oxford handbook of positive psychology and disability* (pp. 37–47). Oxford University Press.

Schlichting, L. (2005). *Peabody picture vocabulary test-III-NL*. Hartcourt Assessment BV.

Semel, E. M., Wiig, E. H., Secord, W. A., Kort, W., Compaan, E., Schittekatte, M., & Dekker, P. (2011). *CELF 4: Clinical evaluation of language fundamentals 4: Nederlandse Versie*. Pearson.

Shilc, M., Shmidt, M., & Koshir, S. (2017). Pragmatic abilities of pupils with mild intellectual disabilities. *Journal of Special Education and Rehabilitation*, *18*(1–2), 55–73.

Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland: Adaptive behavior scales: Interview edition, expanded form*. American Guidance Service.

Staikova, E., Gomes, H., Tartter, V., McCabe, A., & Halperin, J. M. (2013). Pragmatic deficits and social impairment in children with ADHD. *Journal of Child Psychology and Psychiatry*, *54*(12), 1275–1283. [CrossRef]

Strategy, I. D. I., & Plan, A. (2015). *17 a Twin-Track Approach of Mainstreaming and Disability-Specific Actions*. International Labour Office.

Test, D. W., Mazzotti, V. L., Mustian, A. L., Fowler, C. H., Kortering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals*, *32*(3), 160–181. [CrossRef]

Tromblin, B. (2008). *Validation of diagnostic standards for language-specific impairment using adolescent outcomes*. Psychology Press.

Van Den Heuvel, E., Manders, E., Swillen, A., & Zink, I. (2016). Developmental trajectories of structural and pragmatic language skills in school-aged children with Williams syndrome. *Journal of Intellectual Disability Research*, *60*(10), 903–919. [CrossRef] [PubMed]

Van Den Heuvel, E., Manders, E., Swillen, A., & Zink, I. (2018). Atypical language characteristics and trajectories in children with 22q11.2 deletion syndrome. *Journal of Communication Disorders*, *75*, 37–56. [CrossRef]

Verdugo, M. A., & Bermejo, B. (2009). *Intellectual disability, social adaptation and behavioral problems*. Pirámide.

Verdugo, M. A., & Schalock, R. L. (2009). Quality of life: From concept to future applications in the field of intellectual disabilities. *Journal of Policy and Practice in Intellectual Disabilities*, *6*(1), 62–64. [CrossRef]

Verdugo, M. A., Schalock, R. L., & Gómez, L. E. (2021). The model of quality of life and support: The union after twenty-five years of parallel paths. *Siglo Cero*, *52*(3), 9–28. [CrossRef]

Vidal, M. V. E. (2014). *Communication: Language, cognition and society*. Akal Editions.

Voci, S. C., Beitchman, J. H., Brownlie, E. B., & Wilson, B. (2006). Social anxiety in late adolescence: The importance of early childhood language impairment. *Journal of Anxiety Disorders*, *20*(7), 915–930. [CrossRef]

Wechsler, D., & Tideman, E. (2005). *WPPSI-III: Wechsler preschool and primary scale of intelligence-: Manual*. Psykologiförlaget.

Wehmeyer, M. L. (2020). Self-determination in adolescents and adults with intellectual and developmental disabilities. *Current Opinion in Psychiatry*, *33*(2), 81–85. [CrossRef] [PubMed]

Wellnitz, S. A. C., Kästel, I., Vllasaliu, L., Cholemkery, H., Freitag, C. M., & Bast, N. (2021). The revised children's communication checklist-2 (CCC-R): Factor structure and psychometric evaluation. *Autism Research: Official Journal of the International Society for Autism Research*, *14*(4), 759–772. [CrossRef]

Wiig, E. H., Secord, W. A., & Semel, E. (2004). *Clinical evaluation of language fundamentals—Preschool, (CELF Preschool-2)*. The Psychological Corporation/A Harcourt Assessment Company.

Wiig, E. H., Semel, E. M., & Secord, W. (2018). *CELF5: Evaluación clínica de los fundamentos del lenguaje*. Pearson Clinical & Talent Assessment.

World Health Organization. (2001). *Mental health: New knowledge, new hope*. World Health Organization.

Young, A., Perrett, D. I., Calder, A., Sprengelmeyer, R. H., & Ekman, P. (2002). *Facial expressions of emotion: Stimuli and test (FEEST)*. University of St Andrews Research Portal.

Zubrick, S. R., Taylor, C. L., Rice, M. L., & Slegers, D. W. (2007). Late language emergence at 24 months: An epidemiological study of prevalence, predictors, and covariates. *Journal of Speech, Language, and Hearing Research*, *50*(6), 1562–1592. [CrossRef]

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